REMARKS

Claims 1-20 are pending. By this Amendment, claim 1 is amended. Support for amended claim can be found throughout the present specification. See, for example, page 10, lines 16-18. No new matter is added.

The Office Action rejects claims 1-2, 5, 8-9, 12-17 and 20 under 35 U.S.C. 112, second paragraph, as being indefinite. Applicants believe that this rejection is overcome with the above amendments to claim 1. Reconsideration and withdrawal of the rejection of claims 1-2, 5, 8-9, 12-17 and 20 under 35 U.S.C. 112, second paragraph, are respectfully requested.

The Office Action rejects claim 10 under 35 U.S.C 102(b) as being anticipated by Visca et al. (EP 1006168). This rejection is traversed.

Claim 10 is directed to a method for conferring anticorrosive properties to a metal surface utilizing certain PFPE compounds.

Visca et al. discloses the use of PFPE compounds having the two end groups selected from the reactive groups a) -CONHR, b) $-CH_2OH$, c) $-CONH(X)SiR^1_n(OR')_{3-n}$, d) $-[CH_2O(R'''O)_p]_k-P(O)(OH)_{3-k}$ for conferring improved oil/water repellency to porous surfaces such as paper, "cotto", wood or fabric (see page 2, lines 14-16 and lines 22-43).

Paper, "cotto", and wood are specifically exemplified as porous surfaces. No metal substrate is specifically disclosed and no anticorrosive properties have been investigated.

It is apparent that the present method which utilizes PFPE having reactive phosphoric and silane groups on metal surfaces or their alloys for conferring

anticorrosive properties is neither disclosed nor suggested by Visca since metal surfaces are not porous substrates. Actually, in Visca et al. there is no example of application on a metal substrate.

Indeed, example 3 of Visca et al., which is mentioned in the Office Action, uses the present perfluoropolyether (PFPE) phosphate di-esters, species (B), but they are applied on porous cotto Toscano which is not a metal substrate.

Applicants note that, in the Visca et al. abstract and paragraph [0007], it is stated that the perfluoropolyether (PFPE) phosphate mono-esters, species (A), imparts water/oil repellency to various substrates including metals. No anticorrosive properties are mentioned.

In addition, from the oil/water repellency values of PFPEs on porous surfaces, one of ordinary skill in the art would not have drawn any information about the anticorrosive behavior of the same PFPE on metal substrates since the oil/water repellency test is completely different from the anticorrosive test. See page 3, paragraph [0024] to paragraph [0026] of Visca et al. in comparison with the anticorrosive test described by the present specification at pages 16-17. The water/oil repellency test on porous surfaces is based on the detection of the absorption time of a drop of water on the porous surface or on the observation of the stain formed by an oil drop after 15 seconds (see page 3, paragraph [0024] to paragraph [0026] of Visca et al.). The anticorrosive test, on the other hand, evaluates the metallic surface aspect after the contact of the metal with air having high humidity (about 80%) for 24h and for 1 month. See the corrosion test described on pages 16-17 of the present specification.

For at least the above reasons, it is respectfully submitted that the invention of present claim 10 is not anticipated by Visca et al. Therefore, reconsideration and withdrawal of the rejection of claim 10 under 35 U.S.C. 102(b) are respectfully requested.

Claims 1-2, 5, 8-9, 12-17 and 20 are rejected under 35 U.S.C. 103(a) as being obvious over Visca et al. in view of Horomi et al. (JP 09-272736) and further in view of Nakanishi et al. (JP 03193976). This rejection is traversed as it may apply to the amended claims.

The invention of present claim 1 is directed to a method for removing calcar deposited on metal surfaces or their alloys by simply washing the surfaces, wherein the metal surface is pretreated, before use, with fluorinated compounds selected from certain perfluoropolyether (PFPE) compounds.

This method allows avoidance of the use of abrasive systems (brushes) or chemical solutions for removing calcar as is required in the prior art (see the present specification at page 10, lines 7-18).

According to the Office Action, Visca et al. discloses treating metal surface with the present PFPE compounds and contacting the surface with flowing water to demonstrate water repellency properties. The Patent Office asserts that since Hiromi et al. teaches that fluorinated compounds similar to Visca et al. impart antifouling properties in combination with water/oil repellency, the combination of the two references renders obvious the presently claimed invention.

As discussed above, Visca et al. is directed to a method for conferring improved oil/water repellency to porous surfaces by applying on the surfaces PFPE compounds having two reactive end groups such as phosphate di-ester.

It is thus apparent that the present method, which utilizes PFPE having reactive phosphoric and silane groups on metal surfaces for conferring anticalcar properties, is neither disclosed nor suggested by Visca et al. Indeed, example 3 of Visca et al., which is mentioned in the Office Action, is not involved with the treatment of metallic surfaces and washing with running water.

Even if, arguendo, Visca et al. had suggested the present first step of application of PFPE on metallic surfaces, Visca et al. does not disclose nor suggest the final step of washing the pretreated surface having calcar deposits with running water. Indeed, the test of water repellency on porous substrate of Visca et al. which consists in the application of **drops** cannot be considered as the same of washing with running water.

The Office Action has, in fact, stated in the Response to Arguments section that Visca et al. require the same process steps of the present invention; however, the present step of washing with running water is apparently absent from the description and teachings of Visca et al.

Since Visca et al. does not teach or suggest all the same process steps, Visca et al. is far from suggesting to remove calcar deposits on metallic surfaces by using the method presently claimed.

Hiromi et al. discloses polyether compounds containing repeating pendant $-CF_3$ groups, which shows improved emulsification dispersibility beside water repellence, oil repellence, antifouling properties and low friction when applied on substrates. See

paragraph [0004] of the translation of Hiromi et al. Calcar is not mentioned as fouling phenomenon.

None of the above properties, in particular the antifouling properties, are investigated on metal surfaces. The working example exemplifies only the oil/water repellency of the compounds applied on polyethylene terepthalate (PET) by means of the values of contact angle versus water and oil. See paragraph [0035] page 6 of the translation. No washing with running water is performed.

As it is apparent, also the combination of Visca et al. with Hiromi et al. does not result in applying fluorinated compounds such as the present PFPE compounds on metal surfaces and washing the treated metal surface having calcar deposits.

Indeed, Hiromi et al. exemplifies only oil/water repellency data (contact angle) of plastic substrates treated with fluorinated compounds: those skilled in the art would not expect anticalcar properties on metal surfaces in view of the oil/water repellency of treated plastic substrates.

Applicants further remark that the compounds of Hiromi et al. are not similar to those of Visca et al., as alleged in the Office Action. The compounds of Hiromi et al. are less fluorinated in that the only fluorinated unit is the repeating pendant $-CF_3$. Additionally, as mentioned above, fouling does not necessarily mean calcar deposits.

Thus, the combination of Visca et al. with Hiromi et al. would not have suggested a method for removing calcar from metal surfaces by applying fluorinated compounds such as the present PFPE and then washing with running water.

Furthermore, the Office Action apparently asserts that, since Nakanishi et al. discloses fluorine compounds for imparting antifouling properties to substances that are

then washed, the combination of Visca et al. with Nakanishi et al. would have resulted in the presently claimed invention.

Nakanishi et al. discloses a finishing composition containing fluorine-based resin able to impart antifouling properties to fibers such as natural fiber, semisynthetic, and synthetic fibers. No structure of the resin is reported. No mention is made of a metal substrate.

Thus, it is apparent that Visca et al. in combination with Nakanishi et al. does not teach or suggest applying on metal surfaces fluorinated compounds such as the present PFPE compounds and then washing to remove calcar deposits.

From the combination of Visca et al. with Nakanishi et al., one of ordinary skill in the art would have found no reason to apply fluorinated compounds such as PFPE to a metal substrate.

Applicants note that the removal of fouling from fiber by washing, as disclosed in Nakanishi et al., is a common practice in the field of textile fibers irrespective to whether the fiber is treated.

Applicants note that the metal substrate treated with the present PFPE is not repellant to calcar deposits (since calcar deposits indeed occur on PFPE pretreated metal surfaces). See the test performed in the present specification at pages 14-15.

What is unexpected is that, by the presently claimed method, it is possible to remove calcar deposits that occur on metal surface only by simple washing if the surface has been pretreated with the present PFPE. See page 15, lines 2-15.

Furthermore, from the capability of imparting oil/water repellency to porous substrates (Visca et al.) and to plastic substrates (Hiromi et al.) or of imparting

antifouling properties to fibers (or Nakanishi et al.), one of ordinary skill in the art would not have predicted the capability of imparting anticalcar properties to metal surfaces.

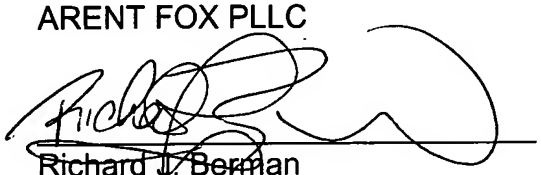
In summary, one of skill in the art would not have arrived at the presently claimed method by combining the applied prior art since the combination lacks any hint addressing applying the present PFPE on metal substrates and then washing to remove calcar deposits.

For at least the above reasons, it is respectfully submitted that the invention of present claims 1-2, 5, 8-9, 12-17 and 20 would not have been obvious over Visca et al. in view of Horomi et al. and further in view of Nakanishi et al. Therefore, reconsideration and withdrawal of the rejection under 35 U.S.C. 103(a) are respectfully requested.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact Applicants' representatives at the telephone number listed below. In the event this paper is not considered to be timely filed, Applicants respectfully petition for an appropriate extension of time. The Commissioner is authorized to charge payment for any additional fees which may be required with respect to this paper or credit any overpayment to Counsel's Deposit Account 01-2300, making reference to Attorney Docket No. 108910-00051.

Respectfully submitted,

ARENT FOX PLLC



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Enclosure: Petition for Extension of Time